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REMARKS

Amendment

Claim 1 is amended to recite pipes connected to the heat exchanger block and that thermal expansion of these pipes is compensated by the heat exchanger block's ability to move. See, e.g., page 3, lines 1-7 of the specification.

New claim 12 corresponds to the combined recitations of claims 3 and 5, written in independent form. Claim 13 corresponds to the combined recitations of claims 3, 5 and 10. Claim 14 corresponds to the combined recitations of claims 5, 6 and 7, written in independent form. New claims 15-17 are directed to further aspects of Applicants' invention. See, e.g., page 4, lines 35-38; and page 5, lines 11-20.

Rejection under 35 USC §103 in view of the Jepson Preamble and Pabst (DE 460 711)

Claims 1, 2, 6, 8, 9 and 11 are rejected as allegedly being obvious in view of the subject matter of Applicants' Jepson preamble taken in combination with Pabst (DE 460 711). This rejection is respectfully traversed.

In the rejection, it is argued that Pabst discloses a heat exchanger which is movable within a vessel so that the location of the heat exchanger can be changed within the heat transfer fluid contained in the vessel. It is not clear which portions of the disclosure are being relied on in the rejection since no portions of the disclosure are cited in the rejection. Moreover, the reference is in German.

In any event, from the drawings of DE '711 it appears that a heat exchanger 3 is immersed within a fluid contained in a vessel. The vessel is thus acting like part of an overall heat exchanger, i.e., the shell of a shell and tube heat exchanger. The heat exchanger 3 also appears to have the capacity of being pivoted between a first position, in which it is immersed within the fluid in the vessel, and a second position, in which it is raised out of the fluid and completely out of the vessel. See Figures 1 and 2.

It is unclear where Pabst discloses changing the location of the heat exchanger within the heat transfer fluid contained in the vessel. From Figures 1 and 2, it appears that only two

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positions are shown, one in which the exchanger is within the fluid and the vessel and the other in which the exchanger is out of both the fluid and the vessel.

Art is related to the limitation
In any event, Pabst does not suggest modifying a block heat exchanger within an insulated vessel. When a heat exchanger block is contained within an insulated vessel this indicates that the fluids that come into heat exchange within the heat exchanger block have, at least in part, a temperature which is substantially different from that of the ambient temperature. Pabst provides no motivation for modifying such a heat exchanger.

Furthermore, Pabst appears to describe a heat exchanger which pivots in and out of a vessel. Thus, Pabst does not suggest a heat exchanger which is movable within a vessel.

More importantly, Pabst provides no suggestion of a heat exchanger which is movable within a vessel in a manner that movement of the heat exchanger will compensate for thermally produced changes in the lengths of pipe attached to the heat exchanger.

In view of the above remarks, it is respectfully submitted that the subject matter of Applicants' Jepson preamble, taken alone or in combination with the Pabst disclosure, fails to render obvious Applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC §103 in view of the Jepson Preamble and Iriarte (US 4,064,932)

Claims 1- 4 and 6-11 are rejected as allegedly being obvious in view of the subject matter of Applicants' Jepson preamble taken in combination with Iriarte (US 4,064,932). This rejection is respectfully traversed.

U.S. '932 discloses a heat exchanger positioned within both an exhaust duct and a supply duct to provide heat transfer between two fluids flowing within the ducts. Referring to Figures 1 and 2, the heat exchange pipes 16 are secured within a rectangular frame 18 positioned within both a supply duct and an exhaust duct. The frame is opened to both the supply fluid and the exhaust fluid in their respective ducts. The heating pipes and the frame are mounted on a plate 20 which is in turn pivotable on shaft 22. By rotating the frame 18, it is possible to adjust the amount of fluid flow that comes into contact with the heat exchange pipes 16.

Thus, the ducts in the system of U.S. '932 are acting like part of an overall heat

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exchanger, i.e., they contain the fluids between which heat exchange is occurring. U.S. '932 does not suggest modifying a block heat exchanger positioned within an insulated vessel. Further, U.S. '932 provides no disclosure or suggestion of a heat exchanger which is movable within a vessel in a manner whereby movement of the heat exchanger will compensate for thermally produced changes in the lengths of pipes attached to the heat exchanger.

In view of the above remarks, it is respectfully submitted that the subject matter of Applicants' Jepson preamble, taken alone or in combination with the disclosure of U.S. 932, fails to render obvious Applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC §103 in view of the Jepson Preamble and Pabst (DE 460 711)

Claims 4 and 5 are rejected as allegedly being obvious in view of the subject matter of Applicants' Jepson preamble taken in combination with Pabst (DE 460 711) and Morison (US 529,288). This rejection is also respectfully traversed.

The disclosure of Pabst (DE '711) is discussed above. Morison (U.S. '288) discloses an apparatus for heating or evaporating liquids using steam. Heating coils of the apparatus can be withdrawn from the evaporating vessel for cleaning or other purposes. Also, one set of heating coils can be removed from the apparatus and replaced by another set. See page 1, lines 14-23. Thus, Morison describes an apparatus in which heating tubes can be rotated into and out of the apparatus. Morison does not suggest modifying a block heat exchanger within an insulated vessel nor does Morison describe or suggest a heat exchanger which is movable within a vessel.

Moreover, U.S. '288 provides no suggestion of a heat exchanger which is movable within a vessel in a manner whereby movement of the heat exchanger will compensate for thermally produced changes in the lengths of pipes attached to the heat exchanger.


In view of the above remarks, it is respectfully submitted that the subject matter of Applicants' Jepson preamble, taken alone or in combination with the disclosure of Pabst and/or Morison, fails to render obvious Applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Priority Document

Applicants respectfully request acknowledgement of receipt of the certified copy of the German Priority application, DE 10110704.8. The certified copy was filed April 23, 2002.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend the claims as follows:

--1. (Twice Amended) In a heat exchanger, comprising at least one heat exchanger block, an insulating vessel which surrounds the heat exchanger block, pipes connected to said heat exchanger block for transporting fluids to and from said heat exchanger block, and securing means for securing the heat exchanger block hanging in the insulating vessel, the improvement wherein the heat exchanger block (1) is arranged movably in the insulating vessel whereby thermally produced changes in the lengths of said pipes connected to said heat exchange block can be compensated for by movement of said heat exchanger block.--